

Patent Claims:

1. Punching and binding machine for a stack of sheets, comprising a punching mechanism which includes an insertion gap limited on one side by a punch matrix and preferably with adjustable depth and/or lateral limit stops for the sheets of the stack of sheets to be provided with a row of binding holes near one edge, and which includes a number of punch blades arranged in defined separation from each other along the insertion gap and moveable via an actuating mechanism perpendicularly through the insertion gap and the punch matrix, wherein preferably individual punch blades can be decoupled from the remaining punch blades as selectable blades, and with a binding mechanism for binding the stack of sheets by means of an elastic binder spine engaging through the binder holes, which binder mechanism includes two spreader bodies for spreading apart the binder spine, which bodies are moveable relative to each other by means of second actuating mechanism and preferably limited in motion by an adjustable limit stop, characterized by a adjustment means (76, 78) for simultaneously operating an adjustment mechanism (68, 70, 72, 74) for the lateral limit stop (66) and a coupling mechanism (88, 92, 94, 96, 98, 100) for the selectable blades (54).
2. Punching and binding machine according to Claim 1, thereby characterized, that the adjustment means (76, 78) includes multiple adjustment positions, preferably defined by a scale (103) and/or detent positions, with predetermined association of the lateral limit stop (66) and the coupling/decoupling condition of the selectable blades (54).
3. Punching and binding machine according to Claim 1 or 2, thereby characterized, that the adjusting mechanism for the lateral limit stop (66) includes a ram (68) slideable in the longitudinal direction of the insertion gap (12) and carrying on

one end the lateral limit stop (66), and adjustable via the adjustment means (76, 78).

4. Punching and binding machine according to Claim 3, thereby characterized, that the adjustment means is a rotation knob (76) coupled with a curve wheel (74), which exhibits an adjustment curve (72) for receiving a slide-block (70) fixed to the ram.
5. Punching and binding machine according to one of Claims 2 through 4, thereby characterized, that the adjustment means (76, 78) includes a calibration or adjusting element (78) for the fine adjustment of the lateral limit stop (66) in any adjustment position.
6. Punching and binding machine according to Claim 5, thereby characterized, that the curve wheel (74) is connected with the rotation knob (76) fixed against rotation and axially displaceable, and that the calibration means (78) is limitedly rotatable relative to the rotation knob and engages via a slide-block (74) in a preferably screw shaped fine adjustment curve (76) of the curve wheel (74).
7. Punching and binding machine according to Claim 6, thereby characterized, that the curve wheel (74) includes at least two, preferably three equal, angularly spaced apart from each other, fine adjustment curves (86) for receiving a corresponding number of slide-blocks (84) provided on the adjustment means (78) in angular separation from each other.
8. Punching and binding machine according to one of Claims 1 through 7, thereby characterized, that the coupling mechanism for the selectable blades (54) includes a camshaft (88) coupled fixed against rotation with the adjusting means in the form of the rotation knob (76) with respectively one cam curve associated

with each of the individual selectable blades (54) as well as respectively one locking means (96) radially adjustable via the associated cam curve (92).

9. Punching and binding machine according to Claim 8, thereby characterized, that the punching blades (46) inclusive of the selectable blades (54) are provided on a blade shaft (28) concentric to the camshaft (88) and respectively exhibit one punch part spaced radially apart from the outer surface of the blade shaft (28) and curved coaxially thereto, so that by rotation of the blade shaft (28) the punch operation can be carried out.
10. Punching and binding machine according to Claim 9, thereby characterized, that selectable blades (54) and the blade shaft (28) are axially not displaceable relative to each other and are rotatable relative to each other about a common rotation axis (54) and that the locking means (96) extends through a radial through hole (94) in the blade shaft (28), wherein in the locking position the locking means engages under the influence of the cam curve (92) in a radial borehole (100) of the selectable blade (54), which borehole is opened radially inwardly towards the blade shaft (28), and in the disengaged position is extracted from the radial borehole (100) of the selectable blade in the direction of the blade shaft (28).
11. Punching and binding machine according to Claim 10, thereby characterized, that the locking means (96) is urged in the direction of the camshaft (88) by the influence of a spring (98) supported in the selectable blade (54).
12. Punching and binding machine according to one of Claims 9 through 11, thereby characterized, that blade shaft (28) is connected fixed against rotation with an operating lever (30).

13. Punching and binding machine according to one of Claims 9 through 12, thereby characterized, that blade shaft (28) is motor driven.

14. Punching and binding machine according to one of Claims 1 through 11, characterized by a measuring device (26) for determining the thickness of the stack of sheets to be bound as well as with a device coupled to the measuring device (24) for adjusting the border limit stops (34) of the binding mechanism (16) depending upon the dimensions of the measured sheet stack thickness.

15. Punching and binding machine for a stack of sheets, comprising a punching mechanism which includes an insertion gap limited on one side by a punch matrix and preferably with adjustable depth and/or lateral limit stops for the sheets of the stack of sheets to be provided with a row of binding holes near one edge, and which includes a number of punch blades arranged in defined separation from each other along the insertion gap and moveable via an actuating mechanism perpendicularly through the insertion gap and the punch matrix, wherein preferably individual punch blades can be decoupled from the remaining punch blades as selectable blades, and with a binding mechanism for binding the stack of sheets by means of an elastic binder spine engaging through the binder holes, which binder mechanism includes two spreader bodies for spreading apart the binder spine, which bodies are moveable relative to each other by means of second actuating mechanism and preferably limited in motion by an adjustable limit stop, characterized by a measuring device (26) for determining the thickness of the stack of sheets to be bound as well as with a device coupled to the measuring device (24) for adjusting the border limit stops (34) of the binding mechanism (16) depending upon the dimensions of the measured sheet stack thickness.

16. Punching and binding machine according to Claim 14 or 15, characterized by a device coupled with the measuring device for adjusting the depth limit stop (112)

in the insertion gap (12) of the punching mechanism (10) according to the dimension of the measured sheet stack thickness.

17. Punching and binding machine for a stack of sheets, comprising a punching mechanism which includes an insertion gap limited on one side by a punch matrix and preferably with adjustable depth and/or lateral limit stops for the sheets of the stack of sheets to be provided with a row of binding holes near one edge, and which includes a number of punch blades arranged in defined separation from each other along the insertion gap and moveable via an actuating mechanism perpendicularly through the insertion gap and the punch matrix, wherein preferably individual punch blades can be decoupled from the remaining punch blades as selectable blades, and with a binding mechanism for binding the stack of sheets by means of an elastic binder spine engaging through the binder holes, which binder mechanism includes two spreader bodies for spreading apart the binder spine, which bodies are moveable relative to each other by means of second actuating mechanism and preferably limited in motion by an adjustable limit stop, characterized by a device coupled with the measuring device for adjusting the depth limit stop (112) in the insertion gap (12) of the punching mechanism (10) according to the dimension of the measured sheet stack thickness.
18. Punching and binding machine according to one of Claims 14 through 17, characterized by an adjusting device (116) coupled with the measuring device (24) for displaying the selected binder spine size according to the measurement of the measured sheet stack thickness.
19. Punching and binding machine for a stack of sheets, comprising a punching mechanism which includes an insertion gap limited on one side by a punch matrix and preferably with adjustable depth and/or lateral limit stops for the sheets of the stack of sheets to be provided with a row of binding holes near one

edge, and which includes a number of punch blades arranged in defined separation from each other along the insertion gap and moveable via an actuating mechanism perpendicularly through the insertion gap and the punch matrix, wherein preferably individual punch blades can be decoupled from the remaining punch blades as selectable blades, and with a binding mechanism for binding the stack of sheets by means of an elastic binder spine engaging through the binder holes, which binder mechanism includes two spreader bodies for spreading apart the binder spine, which bodies are moveable relative to each other by means of second actuating mechanism and preferably limited in motion by an adjustable limit stop, characterized by a measuring device (24) for determining the thickness of the stack of sheets to be bound as well as an adjusting device (116) coupled with the measuring device (24) for displaying the selected binder spine size according to the measurement of the measured sheet stack thickness.

20. Punching and binding machine according to one of Claims 14 through 19, thereby characterized, that the measuring device (24) includes a measuring chamber (22) for receiving the stack of sheets to be bound as well a measuring means (108, 110) engaging in the measuring chamber (22) and coupled with the adjusting device for the border limit stop (114) and/or the depth limit stop (118) and/or with the display device (116).
21. Punching and binding machine according to Claim 20, thereby characterized, that the measuring chamber (22) includes a floor (104) for setting up one of the edges of the stack of sheets as well as a contact surface (106) projecting upwardly from the floor for the back broad side of the stack of sheets, and that the measuring means (108, 110) includes an arm for striking against the front broad side of the stack of sheets.

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22. Punching and binding machine according to Claim 21, thereby characterized, that the measuring means (108, 110) is rotatable about an axis parallel to the contact surface (106) and extends with its arm into the measuring chamber (22).
23. Punching and binding machine according to one of Claims 20 through 22, thereby characterized, that floor (104) of the measuring chamber (22) exhibits multiple steps (118) preferably stepping down towards the contact surface (106).
24. Punching and binding machine according to Claim 23, thereby characterized, that the breadth of the steps (118) is smaller than the width of the insertion gap (12) of the punching mechanism (10).
25. Punching and binding machine according to one of Claims 1 through 24, thereby characterized, that one or both spreader bodies (36) is limitedly moveable relative to the other spreader body (38) by means of an operating means (34) formed as a ram or pusher.
26. Punching and binding machine according to Claim 25, thereby characterized, that one of the two spreader bodies (36) is straight and the other comprises angle-forming bent spreader elements.
27. Punching and binding machine according to Claim 26, thereby characterized, that spreader body (36) with the straight spreader elements is slideable.
28. Punching and binding machine for a stack of sheets, comprising a punching mechanism which includes an insertion gap limited on one side by a punch matrix and preferably with adjustable depth and/or lateral limit stops for the sheets of the stack of sheets to be provided with a row of binding holes near one edge, and which includes a number of punch blades arranged in defined separation from each other along the insertion gap and moveable via an

actuating mechanism perpendicularly through the insertion gap and the punch matrix, wherein preferably individual punch blades can be decoupled from the remaining punch blades as selectable blades, and with a binding mechanism for binding the stack of sheets by means of an elastic binder spine engaging through the binder holes, which binder mechanism includes two spreader bodies for spreading apart the binder spine, which bodies are moveable relative to each other by means of second actuating mechanism and preferably limited in motion by an adjustable limit stop, characterized by a punch magazine (20) for receiving a respectively one of the stack of sheets to be bound, which includes a floor (104) for setting up one of the edges of the stack as well as a contact surface (106) projecting at an incline upwards from the floor for one of the broad side surfaces of the stack of sheets, wherein the floor exhibits multiple steps descending towards the inclined contact surface (106).

29. Punching and binding machine according to claim 28, thereby characterized, that that the breadth of the steps (118) is smaller than the width of the insertion gap (12) of the punching mechanism (10).